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12 June 1956

CMCC Doc. No. 151X5.140
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Dear Dick:

We are forwarding herewith seven copies of Progress Report No. 11, covering the work performed on System No. 3 during the two-month period extending from 4 April to 4 June 1956.

Sincerely,

Burt

Burt

Enclosures:
CMCC No. 163X5.4,
Copies 1-7 of 9



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SDPC-7142
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Two-Month Progress Report No. 11
System No. 3
Contract No. A-101
4 April 1956 to 4 June 1956

CMCC Document No. 163X5.4
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(This document contains a total of 10 sheets, including this title sheet.)



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SYSTEM 3

TWO-MONTH PROGRESS LETTER NO. 11

4 April 1956 to 4 June 1956

1-0. GENERAL. During the period covered by this report, work on the prototype system has continued and preliminary planning and measures required for pilot production have been undertaken.

2-0. FLIGHT TEST PLANS. Mounting brackets and a junction box will be installed in the flight-test aircraft. Temperature measurement equipment is being assembled for the flight tests scheduled to begin on 8 June 1956. The mock-up of the receiver unit which was used in preparation for flight testing is shown in figure 1.

3-0. PREAMPLIFIER ASSEMBLY. Construction of the prototype preamplifier assembly has been completed. (See figure 5.) This assembly has been tested in conjunction with the r-f assemblies and its performance has proven satisfactory.

4-0. R-F AMPLIFIER ASSEMBLY. All prototype r-f assemblies have been fabricated and the adverse effects of electrostatic capacity between printed-circuit connections have been eliminated. This was accomplished by modifying the etched-circuit lines of the prototype assemblies. This required that the layout and art work for the etched boards be modified accordingly. However, prototype assemblies in their present form are suitable for all evaluation tests, and these modifications are not expected to delay the program. (See figure 5.)

5-0. I-F AMPLIFIER ASSEMBLY.

5-1. A photograph of the completed i-f assembly is shown in figure 4. An evaluation of the first prototype i-f assembly, operating in conjunction with the breadboard sweep assembly, has been

completed. Although a 20-db deficiency in gain was noted initially, this was corrected by changing the input transformer. In addition, the circuit following the detector required minor modification. When these changes were made, operation proved to be satisfactory.

5-2. Monitoring of f-m signals (as requested by the customer) has been provided for by merely adding a coupling capacitor from the AGC discriminator to the audio amplifier. This addition, however, produced undesirable feedback, and it therefore became necessary to reroute the audio signal. Although this change required modification of the prototype etched-board layout, no appreciable delay in the construction of the prototype resulted, and completion of the first pilot production assembly will not be delayed by more than three days by this change. Three additional prototype units (required for one complete prototype system) will be ready on 8 June 1956.

6-0. SECOND L-O ASSEMBLY. The final layout of this assembly has been completed and etched boards have been fabricated. Fabrication of encapsulated circuit-part groupings was started and the assembly of the first unit has been completed. (See figure 4.)

7-0. SWEEP ASSEMBLY. The layout of the prototype assembly has been completed and prototype etched boards have been fabricated. The numerous encapsulated circuit-part groupings required for this assembly are being fabricated. Some delay in completing this prototype assembly was incurred because changes in circuit constants were required. The initial assembly has been completed. (See figure 4.)

8-0. CHASSIS ASSEMBLY. (See figures 2 and 3.) A prototype chassis assembly has been completed. This assembly includes the power supply, all etched board connectors, the notch filter, a wire harness for interconnecting all etched board assemblies, and all

input and output connectors. Two additional chassis assemblies are being constructed, one of which is to be used for laboratory test purposes, and one of which is to be used as a production model.

9-0. GROUND-BASED BLOWER. A prototype ground-based blower assembly has been completed. This unit will be used to cool the airborne units during preflight testing. (See figure 6.)

10-0. THE JUNCTION BOX. Construction of the prototype junction box (to be installed aboard the flight-test aircrafts) has been completed. The receiver cover will be suitably braced so that the junction box may be mounted there.

11-0. PLANNING. During the next monthly interval, the major effort will be directed toward achieving the following objectives:

a. completion of the prototype system

b. completion of prototype-system bench testing

c. completion of pilot-production parts lists

d. the start of prototype-system flight testing (on or about 8 June 1956)

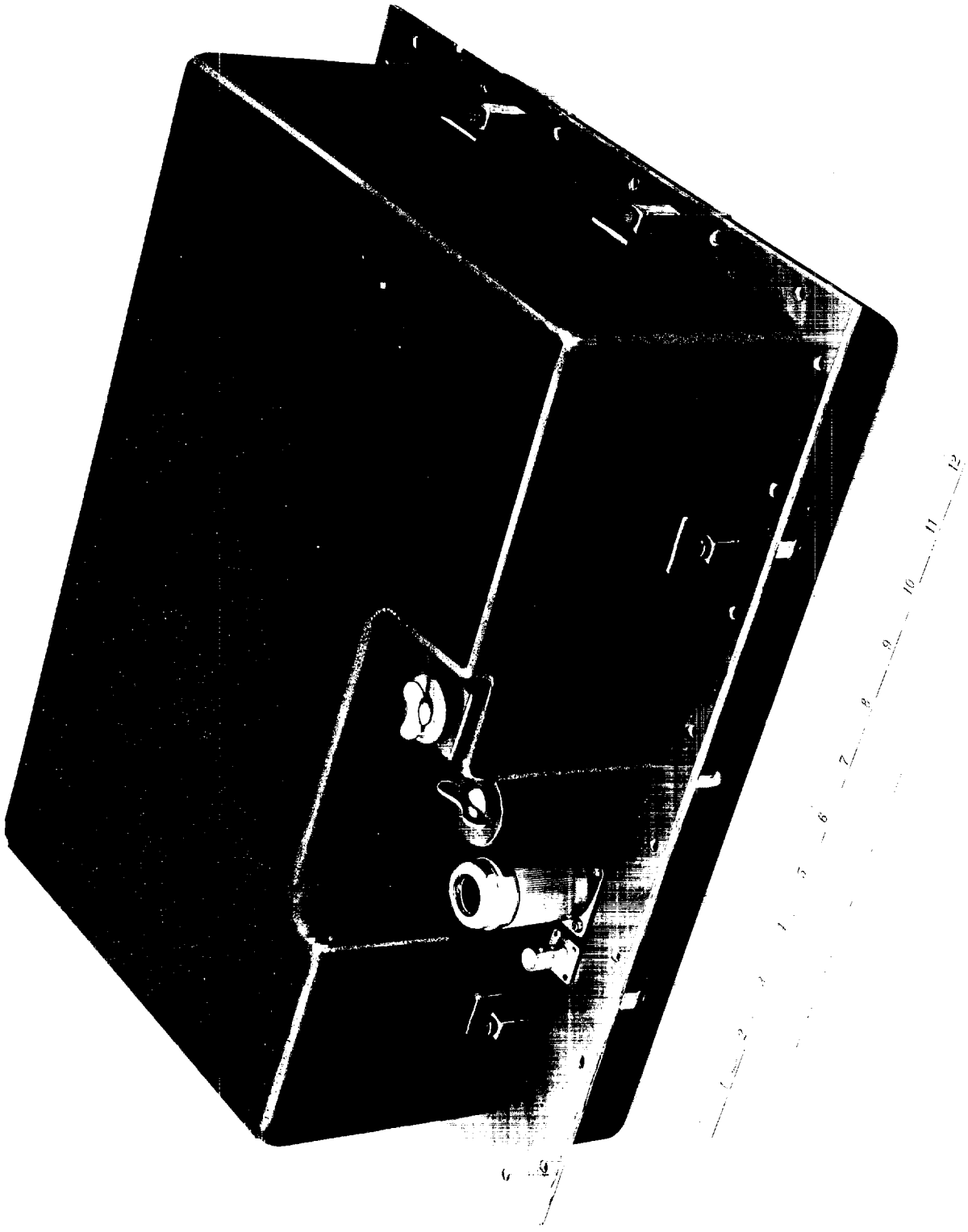

Figure 1. Airborne Receiver Unit, Mockup Assembly

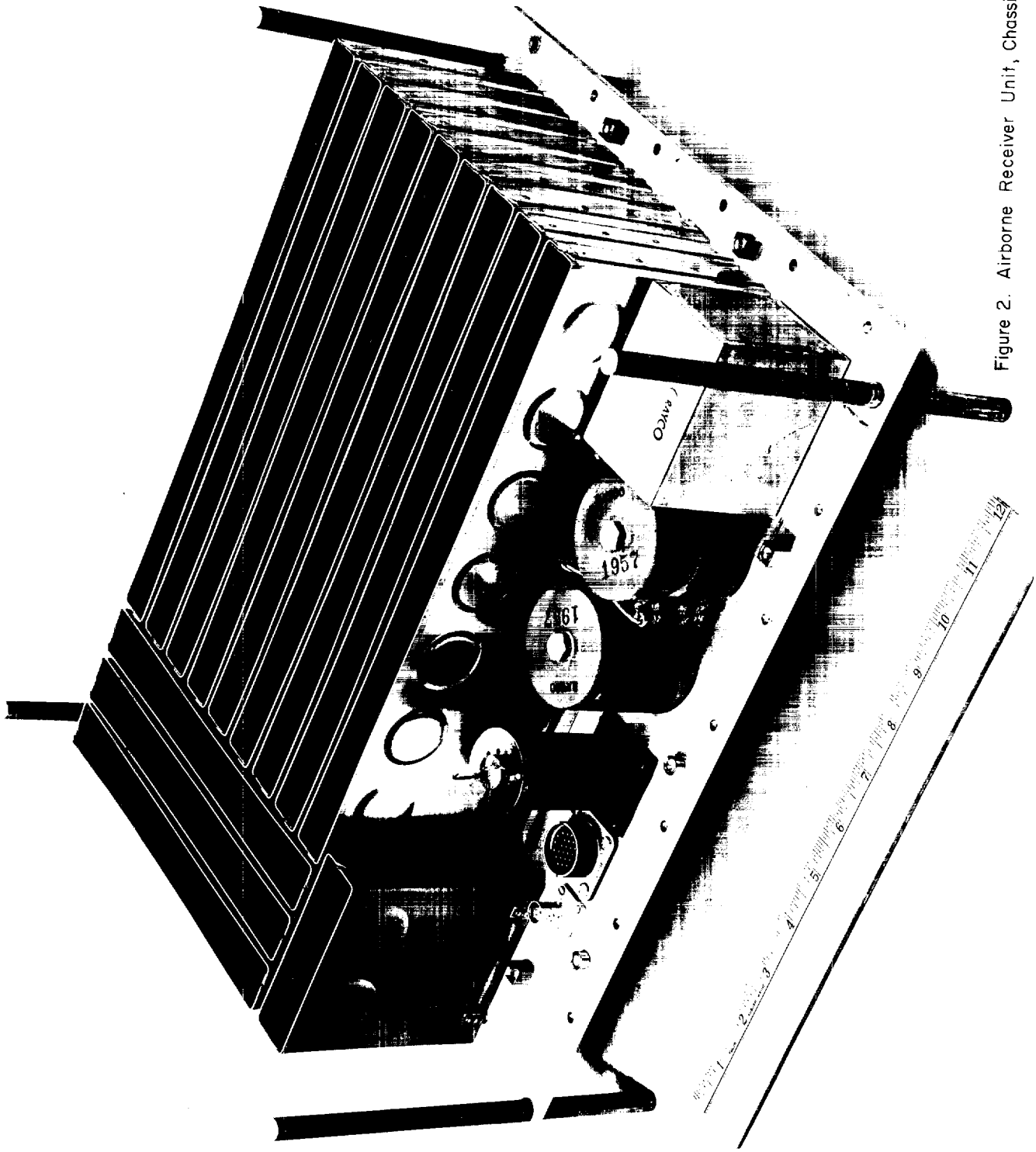

Figure 2. Airborne Receiver Unit, Chassis Assembly

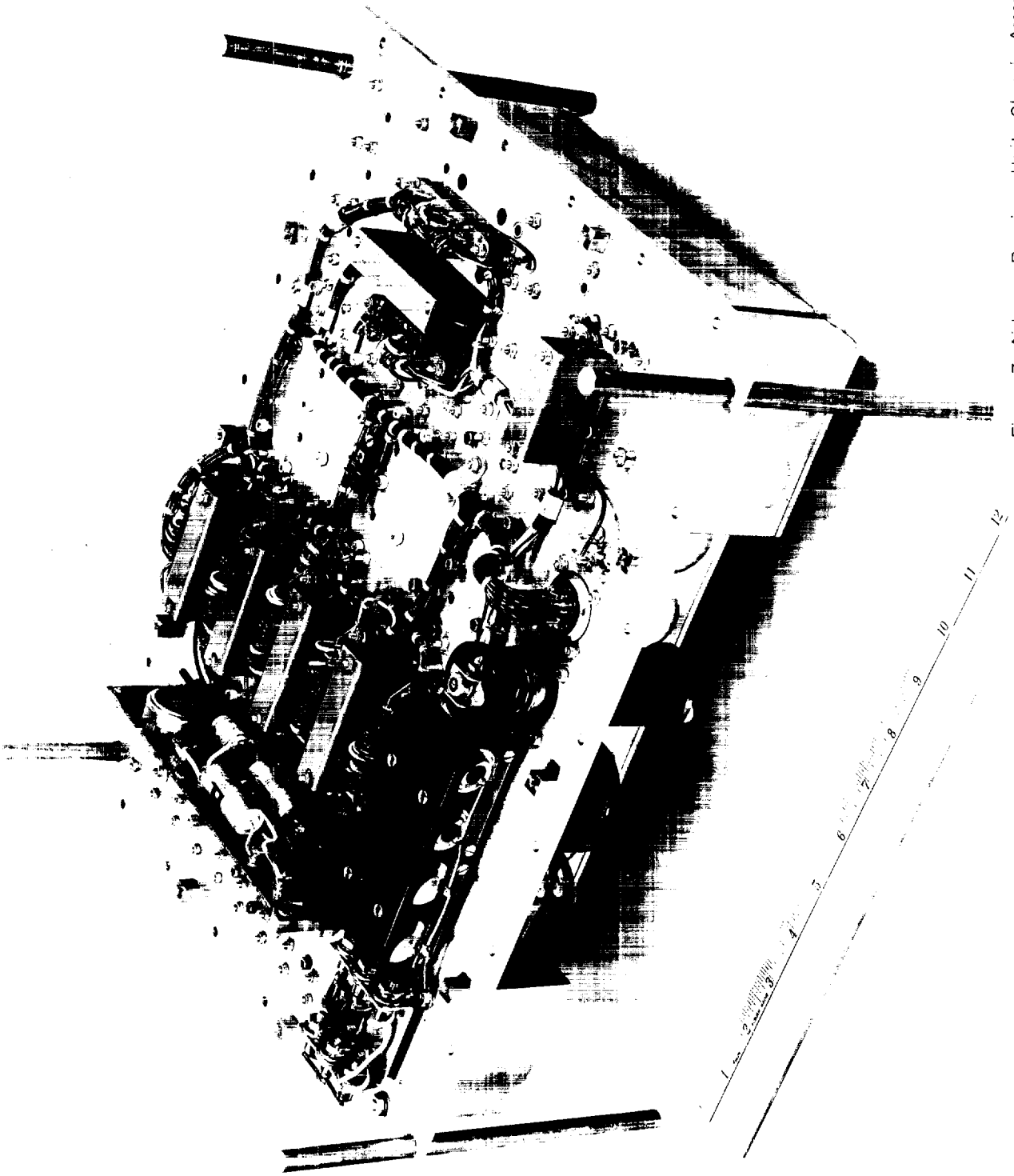

Figure 3. Airborne Receiver Unit, Chassis-Assembly Wiring

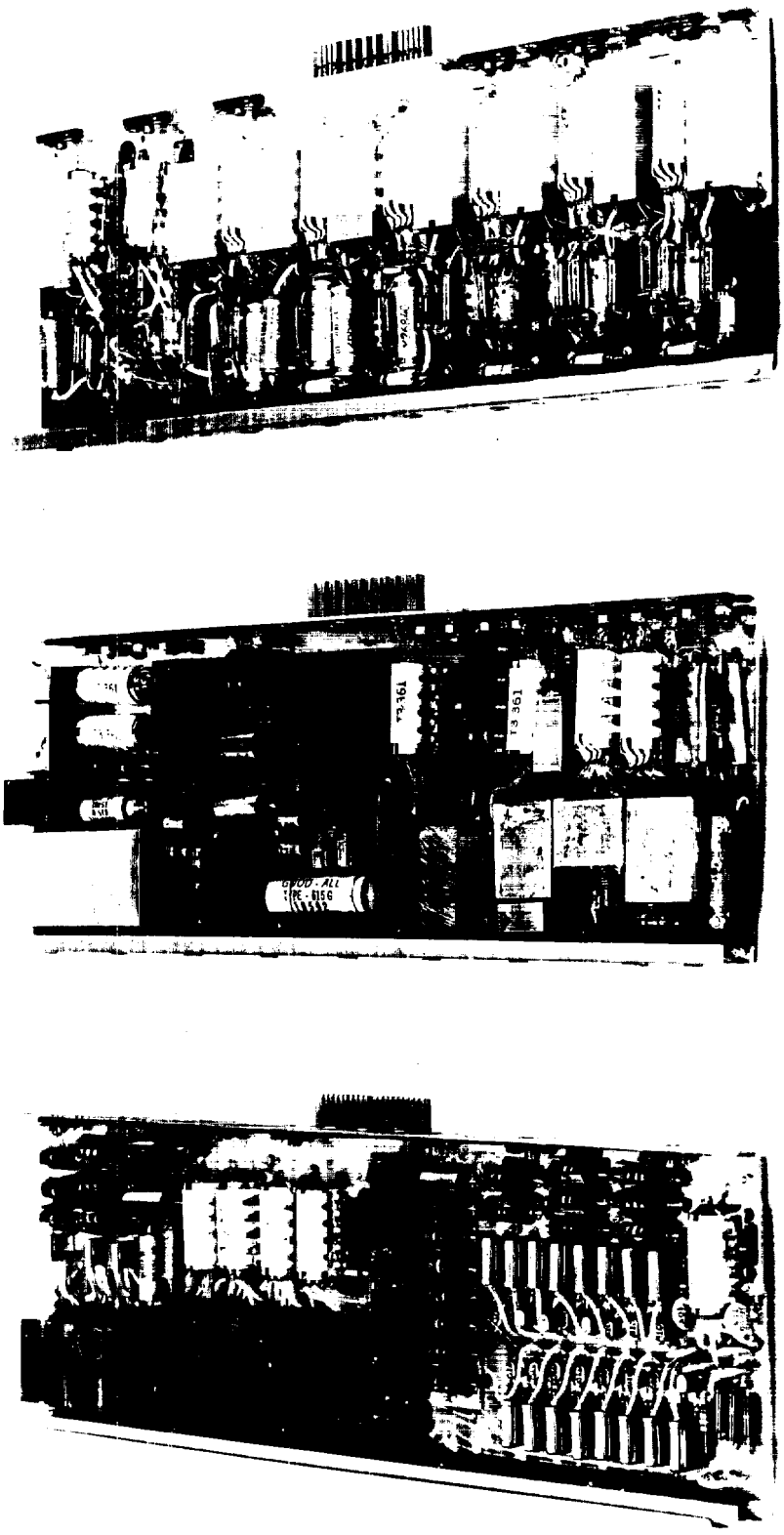

Figure 4. Second L-O, Sweep, and I-F Plug-In Assemblies, Left to Right

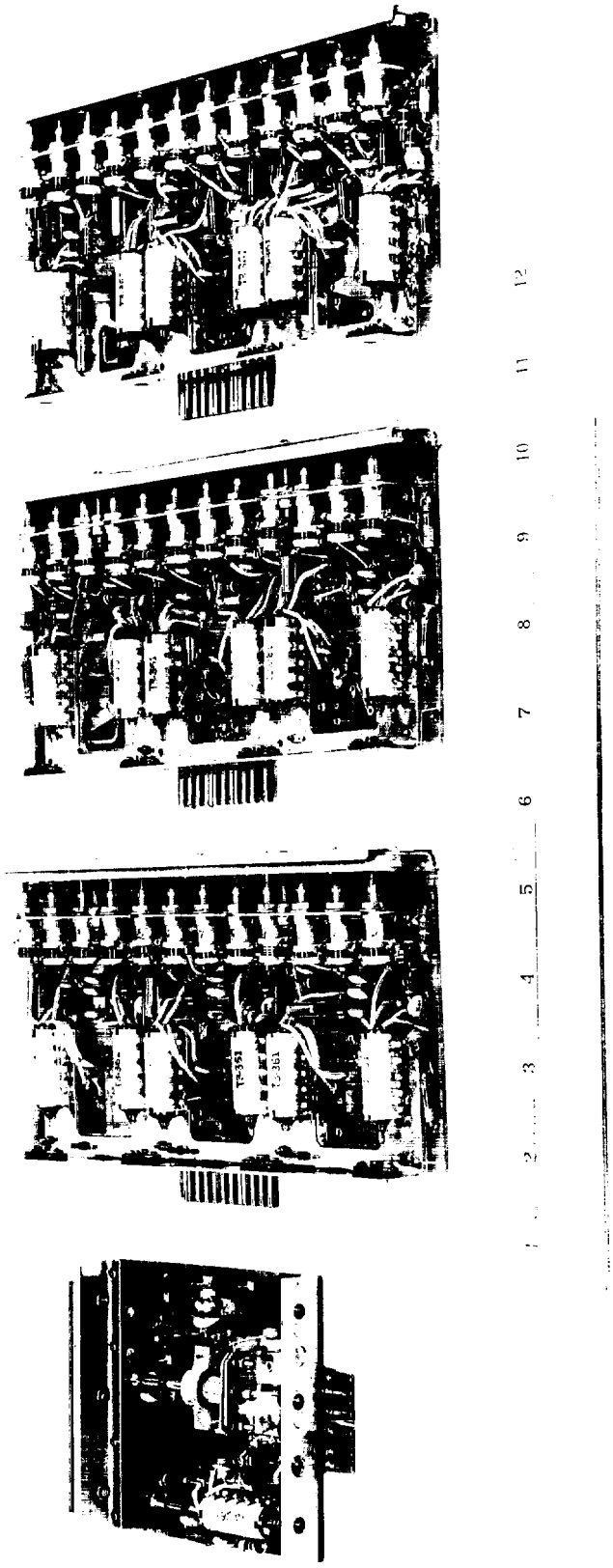

Figure 5. Preamplifier and R-F Head, Plug-In Assemblies, Left to Right

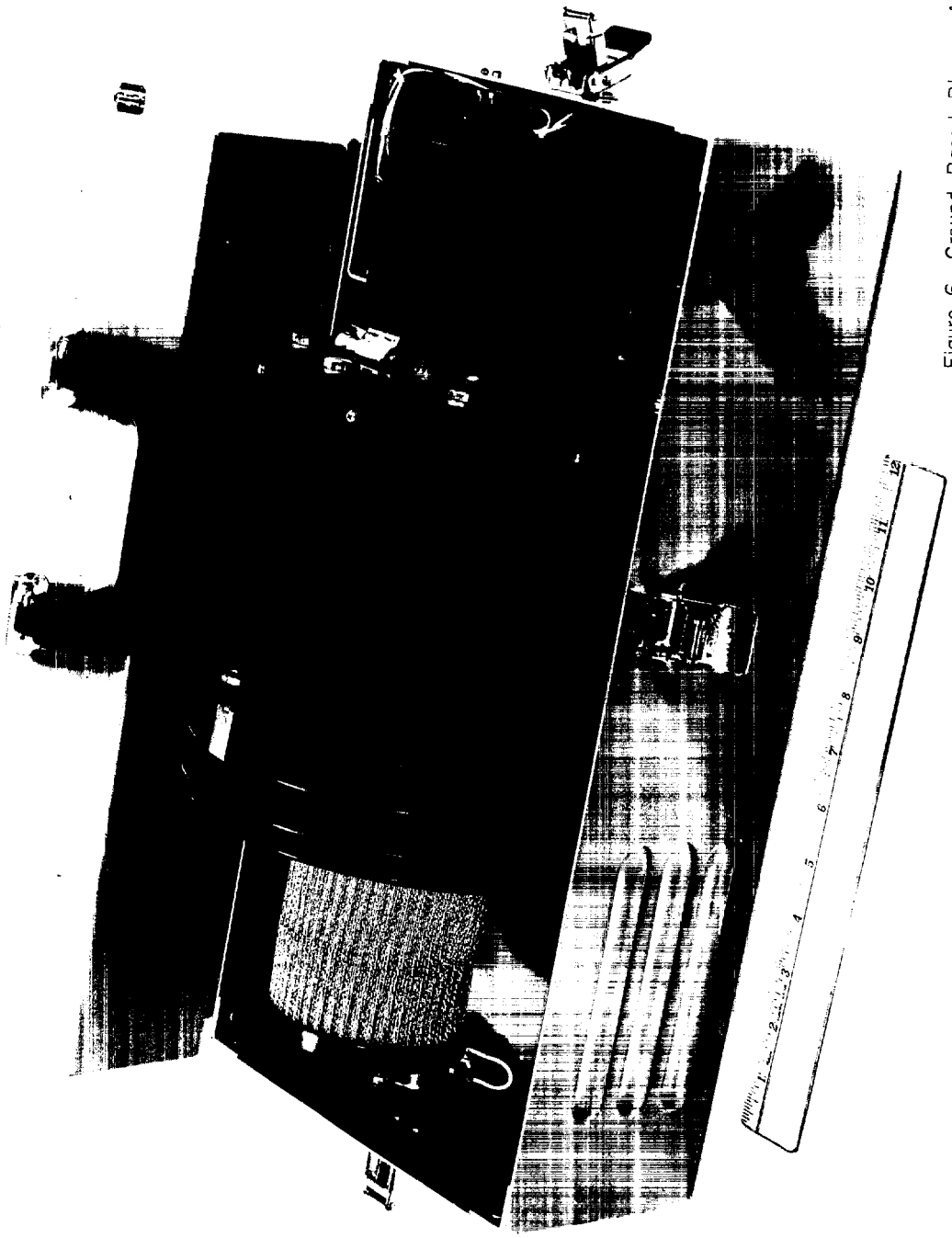

Figure 6. Ground-Based Blower Assembly